



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

PRELIMINARY ISSUE

601.0761

Job Sheet 211106



Part No: 601.0761

Job Qty: 3 pcs

Part Name: Safety Pin



139 Valve

Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 7/6/20

Job Tracking No:

Due Date: 7/17/20

Created By: Jennifer Renwick

Type: SOLD

Description:

Note: 601.0761 REV.A IPP REV:A 20.06.24 NEW ISSUE DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier			
110	Purchasing <i>memaster</i>	3		7/16/20	0.00	0.00	Purchasing - 1			<i>je</i> JUL 8 9 2020
	<i>POHBO 46698</i>	<i>pcs</i>				<i>x3</i>	Purchasing - 2			
							Purchasing - 3			
120	Packaging 2-1 - Receive - B4B	3		7/16/20	0.00	0.00	Packaging 2 - 1 - B4B			
		<i>pcs</i>					Packaging 2 - 2 - B4B			
							Packaging 2 - 3 - B4B			
							Packaging 2 - 5 - B4B			<i>je</i> MM 8 9 2020
							Packaging 2 - 4 - B4B			
							Packaging 2 - 6 - B4B			
							Packaging 2 - 7 - B4B			
							Packaging 2 - 8 - B4B			
							Packaging 2 - 9 - B4B			
							Packaging 2 - 10 - B4B			
							Packaging 2 - 11 - B4B			
							Packaging 2 - 12 - B4B			
							Packaging 2 - 13 - B4B			
							Packaging 2 - 14 - B4B			
							Packaging 2 - 15 - B4B			
							Packaging 2 - 16 - B4B			
							Packaging 2 - 17 - B4B			
							Packaging 2 - 18 - B4B			
							Packaging 2 - 19 - B4B			
							Packaging 2 - 20 - B4B			
							Packaging 2 - 21 - B4B			
							Packaging 2 - 22 - B4B			
							Packaging 2 - 23 - B4B			
							Packaging 2 - 24 - B4B			
							Packaging 2 - 25 - B4B			
							Packaging 2 - 26 - B4B			
							Packaging 2 - 27 - B4B			
							Packaging 2 - 28 - B4B			



Container No: S286907



Part: 601.0761

Job No: 211106

Serial No/Batch: S286907

Revision: REV.A

Inspector:

Exp Date:

Instructions:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaero.com

Date: 07/09/20

Plex 7/6/20 10:57 AM Dart.Renwick.Jennifer

7/6/2020

[Dart Hawkesbury] Job Sheet - Renwick, Jennifer

					Packaging 2 - 29 - B4B	
					Packaging 2 - 30 - B4B	
					Packaging 2 - 31 - B4B	
					Packaging 2 - 32 - B4B	
					Packaging 2 - 33 - B4B	
					Packaging 2 - 34 - B4B	
					Packaging 2 - 35 - B4B	
					Packaging 2 - 36 - B4B	
					Packaging 2 - 37 - B4B	
130 QC 6	3 pcs	7/16/20	0.00 0.00	QC 6 - 9		
				QC 6 - 68		
				QC 6 - 61		
				QC 6 - 40		DAS 82
				QC 6 - 81		9-89
				QC 6 - 82		JUL 09 2020
140 Conventional Mill - 1 - B4B	3 pcs	7/17/20	0.25 0.50	Conventional Mill - 1 - B4B		
				Conventional Mill - 2 - B4B		
150 QC 5 QC2 155 QC8	3 pcs	7/17/20	0.00 0.00	QC 5 - 10		
				QC 5 - 12		
				QC 5 - 17		
				QC 5 - 18		
				QC 5 - 19		
				QC 5 - 22		
				QC 5 - 24		
				QC 5 - 3		
				QC 5 - 43		
				QC 5 - 49		
				QC 5 - 51		
				QC 5 - 58		
				QC 5 - 68		
				QC 5 - 9		
				QC 5 - 50		
				QC 5 - 30		
				QC 5 - 40		
				QC 5 - 61		
				QC 5 - 81		
				QC 5 - 82		
160 Packaging 3-1 - Stock - B4B	3 pcs	7/17/20	0.00 0.00	Packaging 3 - 1 - B4B		
				Packaging 3 - 2 - B4B		
				Packaging 3 - 3 - B4B		
				Packaging 3 - 4 - B4B		
				Packaging 3 - 5 - B4B		
				Packaging 3 - 6 - B4B		
				Packaging 3 - 7 - B4B		
				Packaging 3 - 8 - B4B		
				Packaging 3 - 9 - B4B		
				Packaging 3 - 10 - B4B		
				Packaging 3 - 11 - B4B		
				Packaging 3 - 12 - B4B		
				Packaging 3 - 13 - B4B		
				Packaging 3 - 14 - B4B		
				Packaging 3 - 15 - B4B		
				Packaging 3 - 16 - B4B		
				Packaging 3 - 17 - B4B		
				Packaging 3 - 18 - B4B		
				Packaging 3 - 19 - B4B		
				Packaging 3 - 20 - B4B		

DAS
36
9-89

QC2-39

QC8-14 JUL 20 2020

DAS
28
9-89

				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
				Packaging 3 - 37 - B4B	
170 QC 21 - SA	3 pcs	7/17/20	0.00 0.00	QC 21 - SA - 21	
				QC 21 - SA - 70	
				QC 21 - SA - 9	
				QC 21 - SA - 77	
Part Op 110 - ISSUE P/O: _____ C OF C IS REQUIRED Descriptions: 120 - Receive & Inspect for Damage & Mat'l Certs 130 - QC6- All purchased or subcontracted products 140 - Modify end of pin as show on dwg Deburr 150 - QC5- Inspect part completeness to step on W/O 160 - Identify as per dwg & Stock 170 - QC21- Final Inspection - Work Order Release					
Job BOM					
Part / Item	Component Name	Quantity	Operation	Container	
98470A010	Shoulder-Style Ring-Grip Quick-Release Pin, 18-8 Stainless Steel, 3/16" Diameter, 1" Usable Length	3 Ea (1 ea)	110-Purchasing		
Job Allocations					
Operation	Component Part	Required	Inventory	Allocated	
110-Purchasing	98470A010	3	0	0	
Part Specifications					
Specifications could not be found.					

GA-
TBD

Plex 7/6/20 10:57 AM Dart.Renwick.Jennifer

INSPECTION SHEET

① TO BE
MEASURED
AT
OP 150
QC 5

Engineering Approval: (If necessary)		Date:	
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H:\FORMS\Quality Assurance\approved QA\Inspection Sheet revB

ENGINEERING CHANGE NOTICE		02477		SHEET 4	
DWG NO 601.0761		REV. A		DATE 07/08/09	
DWG TITLE: SAFETY PIN		J. GARDINER		EFFECT ON DWG: ☐ INC. ☒ UNINC.	
APPROVED BY: <i>[Signature]</i>		ENGR		MFG	
TRANSACTION CODES (TC): A-ADD R-REVISE C-CREATE D-DELETE		OC		EFF: NEXT ORDER	
REASON: DELETED CROSS LINES FROM TOLERANCE BLOCK PER ECR 09-42, AND REVISED CAGE CODE					

SHEET 1, ZONE D6 IS:

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER NO. *211106*

1		601.2173		SAFETY PIN					
QTY REQ'D		FIND No.		PART No.		DESCRIPTION		MAT'L SPEC	
NEXT ASSY (S)		ORIGINAL DATE (DD-MM-YY)		DATE OF REVISION		D.P.		APICAL INDUSTRIES, INC.	
		DRAWING APPROVAL		D. MARCH 07-14-04		CONTRACT No.		SAFETY PIN	
		UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES		TOLERANCES ARE AS SHOWN		SCALE	
		FRACTIONS ARE TO BE SHOWN AS 1/2, 3/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 1/1024, 1/2048, 1/4096, 1/8192, 1/16384, 1/32768, 1/65536, 1/131072, 1/262144, 1/524288, 1/1048576, 1/2097152, 1/4194304, 1/8388608, 1/16777216, 1/33554432, 1/67108864, 1/134217728, 1/268435456, 1/536870912, 1/1073741824, 1/2147483648, 1/4294967296, 1/8589934592, 1/17179869184, 1/34359738368, 1/68719476736, 1/137438953472, 1/274877906944, 1/549755813888, 1/1099511627776, 1/2199023255552, 1/4398046511104, 1/8796093022208, 1/17592186044416, 1/35184372088832, 1/70368744177664, 1/140737488355328, 1/281474976710656, 1/562949953421312, 1/1125899906842624, 1/2251799813685248, 1/4503599627370496, 1/9007199254740992, 1/18014398509481984, 1/36028797018963968, 1/72057594037927936, 1/144115188075855872, 1/288230376151711744, 1/576460752303423488, 1/1152921504606846976, 1/2305843009213693952, 1/4611686018427387904, 1/9223372036854775808, 1/18446744073709551616, 1/36893488147419103232, 1/73786976294838206464, 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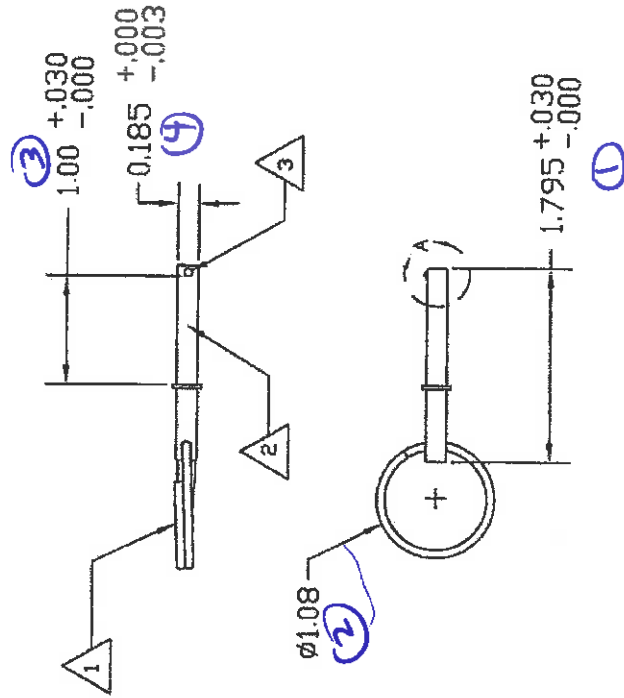
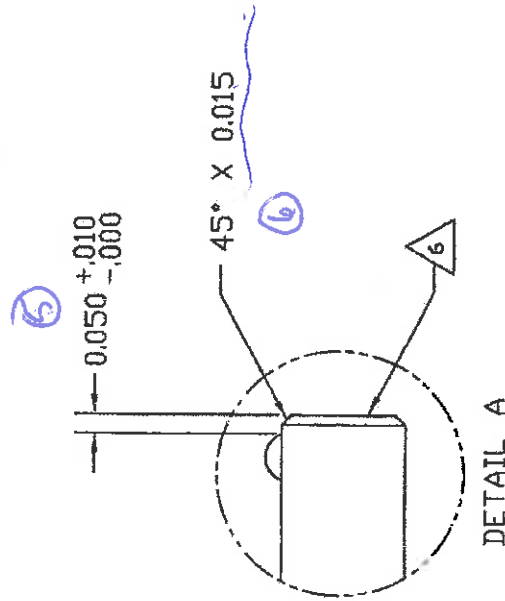
APICAL INDUSTRIES, INC.		ENGINEERING CHANGE NOTIC		ND.	00911	SHEET	OF 1
DWG NO. 601.0761		REV: A	PREPARED BY M. HUGHES	DATE: 03/01/05	EF. LCT ON DWG		
DWG TITLE: SAFETY PIN					INC. UNINC.		
APPROVED BY: <i>[Signature]</i>		ENGR	MFG	QC	EFF	CURRENT ORDER	
REASON: IMPROVE FINISHED LOOK							

5. ORIGINAL PURCHASE: McMASTER-CARR P/N 98470A010

6. MODIFY END AS SHOWN

7. VENDOR: RNG PRECISION

ZONE B1 IS



ZONE B6 IS

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DOCUMENTS EFFECTED:	☐ MDL	☐ INSTALL	☐ INSTRUC	☐ ICA	☐ FMS	☐ BOM	CHANGE CATEGORY	☐ MAJOR	☒ MINOR	DER REVIEW REQUIRED	☐ YES	☒ NO
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1.820

1.820

1.820

Entered:

Date:

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No.

Route update only



Job: _____		DISPOSITION		DEPARTMENT/PROCESS		Engineering/ Water Jet Supplier Quality																																																													
Part No. _____		Rework Scrap Use-as-is		Cross tube Small Fab Finishing		Eng. (Non-AW) Prod. Eng. Coord. Rec/Store/Packaging																																																													
Date:	Sequence #:	QTY Affected:		MRB (QS1042)																																																															
Description Work Order Deviation				Disposition																																																															
Root Cause				FAULT CATEGORY																																																															
				<table border="1"> <tr> <td>Operator</td> <td></td> <td>Pressure/Forced</td> <td></td> <td>Contamination</td> <td></td> <td>Power Loss/Surge</td> <td></td> </tr> <tr> <td>Manufacturing Process</td> <td></td> <td>Bending</td> <td></td> <td>Misaligned/off center</td> <td></td> <td>Folio/Program</td> <td></td> </tr> <tr> <td>Equip/Tooling</td> <td></td> <td>Crushing</td> <td></td> <td>BOM/Route</td> <td></td> <td>Grain Direction</td> <td></td> </tr> <tr> <td>Handling/Preservation</td> <td></td> <td>Cracks</td> <td></td> <td>Broken/Damage/Defect</td> <td></td> <td>Weld</td> <td></td> </tr> <tr> <td>Material</td> <td></td> <td>Crimp/Kink/Ripple/Wave/Twist</td> <td></td> <td>Incomplete/Unclear Instructions</td> <td></td> <td>Wrong Stock Pulled</td> <td></td> </tr> <tr> <td>Product Improvement</td> <td></td> <td>Marks/Chatter</td> <td></td> <td>Drill Holes</td> <td></td> <td>Out of Sequence</td> <td></td> </tr> <tr> <td>Process Improvement</td> <td></td> <td>Mislabeled</td> <td></td> <td>Fit/Function</td> <td></td> <td>Off-set/Set-up</td> <td></td> </tr> <tr> <td>Human Factors</td> <td></td> <td colspan="2">Other/Details:</td> <td colspan="4"></td> </tr> </table>				Operator		Pressure/Forced		Contamination		Power Loss/Surge		Manufacturing Process		Bending		Misaligned/off center		Folio/Program		Equip/Tooling		Crushing		BOM/Route		Grain Direction		Handling/Preservation		Cracks		Broken/Damage/Defect		Weld		Material		Crimp/Kink/Ripple/Wave/Twist		Incomplete/Unclear Instructions		Wrong Stock Pulled		Product Improvement		Marks/Chatter		Drill Holes		Out of Sequence		Process Improvement		Mislabeled		Fit/Function		Off-set/Set-up		Human Factors		Other/Details:	
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Process Improvement		Mislabeled		Fit/Function		Off-set/Set-up																																																													
Human Factors		Other/Details:																																																																	
Completed By				Lead hand / Supervisor																																																															
QC / QA Coordinator																																																																			



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB046698



Supplier: MCM001-VU
McMaster-Carr Supply Co,
P.O. Box 7690
Chicago, IL 60680-7690 USA
Phone: 330 995 5500
Fax: 330 995 9600

Attention: N/A,

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB046698

PO Date: 7/7/20

Due Date: 7/10/20

Purchase Order

Revision:

Revision Date:

Issued By: Guerin, Kimberley
Phone: 613-632-5200 Ext: 298
kguerin@dartaero.com

Via: Ground

Pymt Terms: Net 60

Freight Terms: Collect

Special Comments:

Items

Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1		M301S23GA-H50		1217T43 3/SF	301 SS SHEET, 12" x 36", 1/2 Hard Temper, 0.029" Thick	Firmed X3	-	7/10/20	3 sf	0 sf	3 sf	\$21.77/sf	\$65.31
2		2147A11		1/pk	Circular Level Vial, Plastic, 1-3/8" Base Diameter	Firmed X3	-	7/10/20	3 Ea	0 Ea	3 Ea	\$5.64/Ea	\$16.92
3		2857T128		2/pk	O-Ring Viton 3/32 Id X 9/16 Od	Firmed X6	-	7/10/20	6 Ea	0 Ea	6 Ea	\$3.375/Ea	\$20.25
4		601.3729		91545A260 5/pk	Nylon Washer	Firmed X15	-	7/10/20	15 Ea	0 Ea	15 Ea	\$0.488/Ea	\$7.32
5		601.2045		6641A41	RTV (LOCTITE 598) : RTV, Loctite 598 EXP: DATE REQUIRED AT 6 MONTH SELF LIFE	Firmed X6	-	7/10/20	6 Ea	0 Ea	6 Ea	\$16.67/Ea	\$100.02
6		6305A12		15 FT PER ROLL	Teflon Sheet receive ea	Firmed X15	-	7/10/20	15 ft	0 ft	15 ft	\$1.048/ft	\$15.72

Plex 7/7/20 3:00 PM Dart.Guerin.Kimberley



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB046698



Items

Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
7		8183K6		1/pk	Wire Guide/Grip	Firmed	-	7/10/20	3 Ea	0 Ea	3 Ea	\$9.83/Ea	\$29.49
8		9642K63		1/pk	440C SS Ball 3/4" Dia.	Firmed	-	7/10/20	5 Ea	0 Ea	5 Ea	\$4.43/Ea	\$22.15
9		MPEEKR0.625-BE		8503K232 4ft	PEEK Round Bar Beige	Firmed	-	7/10/20	4 ft	0 ft	4 ft	\$29.39/ft	\$117.56
10	211106	98470A010		1/pk	Shoulder-Style Ring-Grip Quick-Release Pin, 18-8 Stainless Steel, 3/16" Diameter, 1" Usable Length	Firmed	-	7/10/20	3 Ea	0 Ea	3 Ea	\$2.86/Ea	\$8.58
Grand Total:												\$403.32	

Order Notes

Procurement Quality Clauses
 A005 RIGHT OF ENTRY
 A016 PERSONNEL QUALIFICATION
 A026 CERTIFICATION OF MATERIAL CONFORMANCE
 A032 DOCUMENT SPECIAL REQUIREMENTS
 A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS
 A040 NOTIFICATION OF QUALITY ESCAPE
 A041 QUALITY MANAGEMENT SYSTEM
 A042 DART NOTIFICATION BY SUPPLIER
 A043 RETENTION OF QUALITY DOCUMENTS
 A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM
 A049 SUPPLIER AWARENESS

Sherrin

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 7/7/20 3:00 PM Dart.Guerin.Kimberley

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
POHB046698

Page 1 of 1

Order Placed By
Kim

07/07/2020

McMaster-Carr Number
7708530-02

Line	Product	Ordered	Shipped
2	2147A11 Circular Level Vial, Plastic, 1-3/8" Base Diameter	3 Each	3
3	2857T128 Viton Fluoroelastomer O-Ring, Chemical- and Steam-Resistant, 3/32 Fractional Width, Dash 113, Packs of 2	3 Packs	3
4	91545A260 Lubricant-Filled Nylon Plastic Washer for 1/4" Screw Size, 0.322" ID, 0.562" OD, Packs of 5	3 Packs	3
5	6641A41 Flexible Gasket Maker Sealant, Loctite 598, 2.36 oz. Tube	6 Each	6
6	6305A12 Ultra-Low-Friction Tape Made with Teflon PTFE, Acrylic Adhesive, 1" Wide, 15 Feet Long	1 Each	1
7	8183K6 Brass Submersible Cord Grip, Metric Threads, for 0.12"-0.2" Cord OD, M8 Knockout Size	3 Each	3
8	9642K63 Tight-Tolerance Hardened 440C Stainless Steel Ball, 3/4" Diameter, Packs of 1	5 Packs	5
10	98470A010 Shoulder-Style Ring-Grip Quick-Release Pin, 18-8 Stainless Steel, 3/16" Diameter, 1" Usable Length	3 Each	3

Shipped separately from our Cleveland warehouse on 07/07

1	1217T43 Fatigue-Resistant 301 Stainless Steel Sheet, 12" x 36", 1/2 Hard Temper, 0.029" Thick	1 Each	1
9	8503K232 Wear- and Chemical-Resistant PEEK Rod Beige, 5/8" Diameter, 4 ft. Length	1 Each	1

Certificate of compliance

This is to certify that the above items were supplied in accordance with the description and as illustrated in the catalog. Your order is subject only to our terms and conditions, available at www.mcmaster.com or from our Sales Department.

DAS
82
9-89

Sarah Weinberg
Sarah Weinberg
Compliance Manager

Notes about your shipment

☐ Certificate for line 8 is available at mcmaster.com/activity.

JUL 08 2020

DART AEROSPACE LTD.

Packing List

200 Aurora Industrial Pkwy
Aurora, OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
POHB046698

Order Placed By
Kim

McMaster-Carr Number
7708530-01

Page 2 of 2

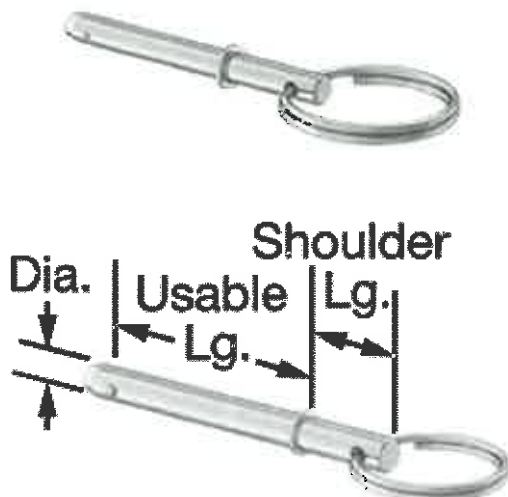
07/07/2020

Notes about your shipment

 Certificate for line 1 is available at mcmaster.com/activity.

McMASTER-CARR**Shoulder-Style Ring-Grip Quick-Release Pin**

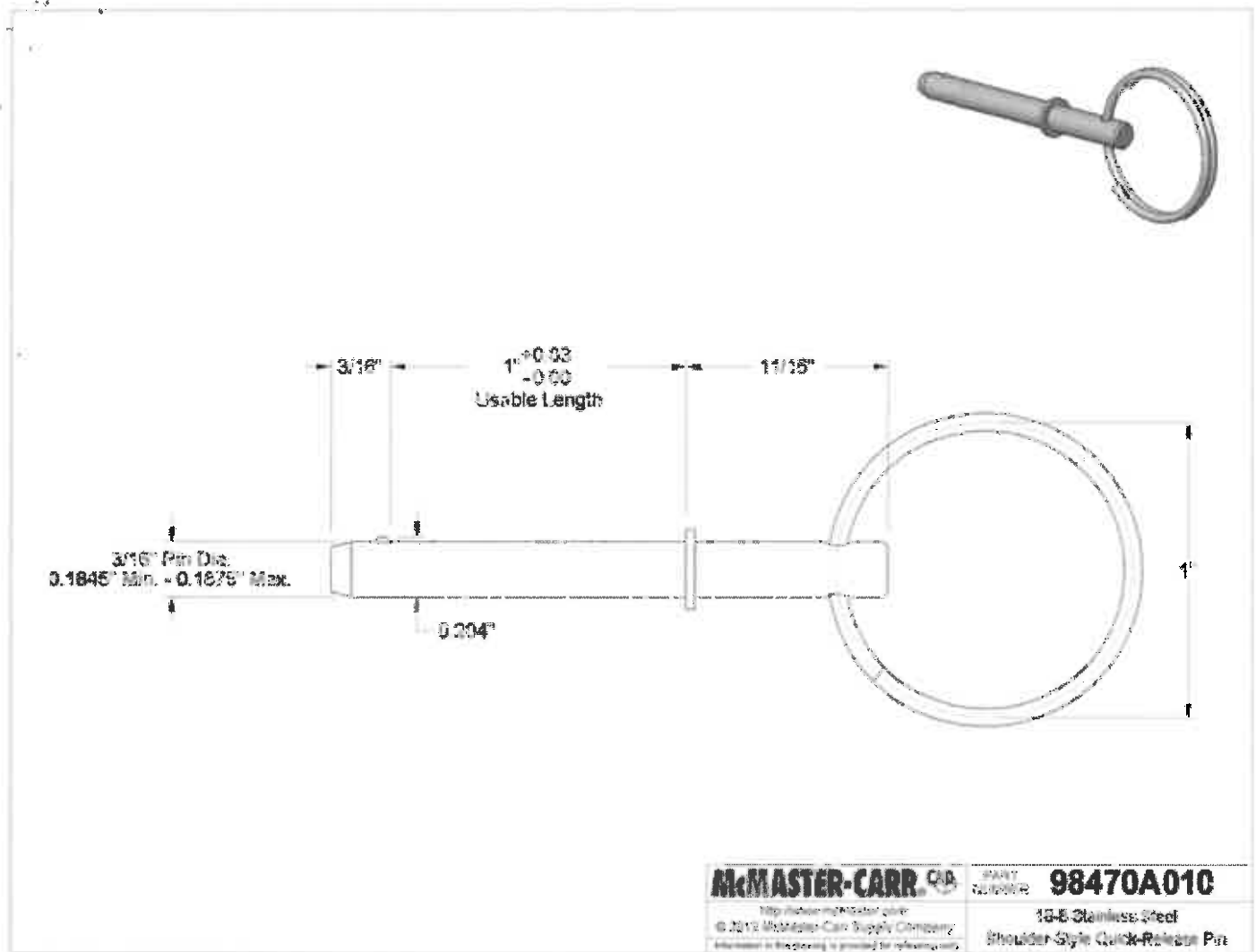
18-8 Stainless Steel, 3/16" Diameter, 1" Usable Length

DAS
82
9-89\$2.86 Each
98470A010

Pin Type	Quick Release
End Type	Spring-Loaded Ball
Head Type	Ring
Shaft Type	Plain
End Shape	Chamfered
System of Measurement	Inch
Material	18-8 Stainless Steel
Usable Length	1"
Diameter	3/16"
Diameter Tolerance	-0.003" to 0"
Shoulder Length	11/16"
Diameter at Extended Ball Height	0.204"
Min. Hardness	Rockwell B85
Breaking Strength	2,700 lbs.
Number of Retaining Balls	1
Ball Material	316 Stainless Steel
Spring Material	316 Stainless Steel
Handle Material	316 Stainless Steel
Lock Type	Nonlocking
Passivation	Not Passivated
RoHS	RoHS 3 (2015/863/EU) Compliant
REACH	REACH (EC 1907/2006) (01/16/2020, 205 SVHC) Compliant
Country of Origin	United States

A shoulder keeps a portion of these pins outside the hole and makes the ring easy to grab. Pins have a spring-loaded ball that pops out when the pin is pushed into a hole, and retracts when the pin is pulled out. For the best fit, the hole should be as close to the diameter as possible, but not larger than the diameter at extended ball height. Breaking strength is measured as single shear, which is the force required to break the pin into two pieces.

18-8 stainless steel pins offer a balance of strength and corrosion resistance. They may be mildly magnetic.



The information in this 3-D model is provided for reference only.

